

WHAT IS CLAIMED IS:

1. A method for the surface treatment of a component  
(1) having a curved component surface (3), comprising:  
5 removing material from the component surface (3)  
along a contour line on the component surface (3) with  
a particle jet (7) that is generated from a particle  
source (5), the particle jet having a blasting distance  
(d), a blasting intensity, a blasting angle ( $\alpha$ ) and a  
10 blasting time, the particle jet characterized in that  
at least one of the distance, intensity, angle and time  
is matched to the contour line in such a way that a  
homogeneous surface roughness is established along the  
contour line.  
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2. The method as claimed in claim 1, wherein the  
matching of the jet parameters takes place  
automatically.
- 20 3. The method as claimed in claim 1, wherein the  
particle source (5) and the component (1) are moved  
relative to one another.
4. The method as claimed in claim 1, wherein the  
25 particle source (5) is moved relative to the component  
(1) in such a way that the blasting distance (d) is  
constant.
5. The method as claimed in claim 1, wherein the  
30 particle source (5) is moved relative to the component  
(1) in such a way that the blasting angle ( $\alpha$ ) is  
constant.
6. The method as claimed in claim 1, wherein the  
35 component (1) has a base body (11) with a base material  
(13), the base body (11) having the component surface  
(3) which, for a first coating (15) to be applied to  
the base body (11), is treated with a first coating  
material (17).

7. The method as claimed in claim 6, wherein the first coating material (17) used is an MCrAlX alloy, where M represents one or more elements comprising iron, cobalt and nickel, Cr represents chromium, Al represents aluminum and X represents one or more elements selected from the group consisting of yttrium, rhenium and the rare earths.

8. The method as claimed in claim 6, wherein the first coating (15) also has the component surface (3) which, for a second coating (19) to be applied to the component (1), is treated with a second coating material (21).

9. The method as claimed in claim 1, wherein the component (1) has a base body (11) with a base material (13), a first coating (15) comprising a first coating material (17) being applied to the base body (11), and the coated component (1), for a second coating (19) to be applied to the component (1), being treated with a second coating material (21).

10. The method as claimed in claim 8, wherein, in the coating process, a ceramic is used as the second coating material (21).

11. The method as claimed in claim 1, wherein the component (1) is designed for a hot gas to flow around it.

12. The method as claimed in claim 1, wherein the component (1) used is a turbine rotor blade (23), a turbine guide vane or a heat shield element (25) of a combustion chamber.

13. The method as claimed in claim 1, wherein the blasting angle ( $\alpha$ ) on the component surface (3) is approximately 20° to 90°.

14. The method as claimed in claim 13, wherein the blasting angle ( $\alpha$ ) on the component surface (3) is approximately  $50^\circ$  to  $90^\circ$ .

5 15. A blasting installation (47) for automated surface treatment of a component (1) having a curved component surface (3), comprising: a particle source (5) for generating a particle jet (7), and a component holder (49) for holding the component (1), the particle source  
10 (5) and the component (1) being movable relative to one another in such a way that, to produce a homogeneous component surface (3) in a blasting process using the particle jet (17), the blasting distance (d) and/or the blasting angle ( $\alpha$ ) adopts a predetermined, in  
15 particular constant value along a contour line on the component surface (3).

16. The method as claimed in claim 15, wherein the blasting angle ( $\alpha$ ) on the component surface (3) is  
20 approximately  $20^\circ$  to  $90^\circ$ .

17. The method as claimed in claim 16, wherein the blasting angle ( $\alpha$ ) on the component surface (3) is approximately  $50^\circ$  to  $90^\circ$ .

25 18. A method for surface treating a component (1) of a gas turbine having a curved surface (3), comprising:  
removing material from the component surface (3) along a contour line on the component surface (3) using

30 a particle jet (7) from a particle source (5) having blasting angle ( $\alpha$ ) of approximately  $20^\circ$  to  $90^\circ$ , a blasting distance (d), a blasting intensity, and a blasting time,

wherein at least one of the distance, intensity,  
35 angle and time of the particle jet (7) is matched to the contour line to establish a homogeneous surface roughness along the contour line.

19. The method as claimed in claim 18, wherein the

particle source (5) is moved relative to the component (1) in such a way that the blasting distance (d) is constant.

- 5 20. The method as claimed in claim 18, wherein the particle source (5) is moved relative to the component (1) in such a way that the blasting angle ( $\alpha$ ) is constant.